

5/46

DART AEROSPACE LTD		Work Order:	24685
Description: Doubler Assembly		Part Number:	D3151-041
Dwg: D3151 Rev. B		Qty:	5 10
		Page 1 of 1	

Step	Location	Procedure	By	Date	Qty
1	DC	Issue Traveler Note: To be made in multiples of 10	H	05.10.26	5 10
2	MV	Cut blank: 2.850" x 4.600" Material: 2024-T3 (QQ-A-250/4) 0.040" thick (M2024T3S.040) Identify for D3151-1 Batch: M 15659	SD	05.11.25	10
3	MV	Cut blank: 6.850" x 2.850" Material: 2024-T3 (QQ-A-250/4) 0.040" thick (M2024T3S.040) Identify for D3151-3 Batch: M 15059	SD	05.11.25	10
4	MV	Machine D3151-1 as per Folio FA476 and Dwg D3151 Stack of 10 Identify as D3151-1	SD	05.12.03	10
5	QC2	Inspect parts as they come off the CNC machine	SD	05.12.03	10
6	QC8	Second check	SD	05.12.03	10
7	MV	Machine D3151-3 as per Folio FA476 and Dwg D3151 Stack of 10 Identify as D3151-3	SD	05.12.03	10
8	QC2	Inspect parts as they come off the CNC machine	SD	05.12.03	10
9	QC8	Second check	SD	05.12.03	10
10	GA	Deburr D3151-1/-3	SAO	05.12.04	10
11	GA	C'sink holes as per Dwg D3151	FE	05.12.06	10
12	QC5	Inspect work to Step 11	FE	05.12.07	10
13	FP	Chemical Conversion Coat as per QSI 005 4.1	FE	05.12.07	10
14	QC3	Inspect Chemical Conversion Coat	FE	05.12.07	10
15	GA	Assemble as per Dwg D3151 Pick: Qty Part Number Description Batch 6 MS20426AD3-3 Rivet M 7681 4 MS20426AD3-4 Rivet M 15786 2 MS21059L08 Nut Plate M 10005 Identify as D3151-041	FF FF FF	05.12.08	10
16	QC5	Inspect work to Step 15	FE	05.12.08	10
17	ST	Identify with part number and batch number using fine point permanent ink marker as per Dwg D3151, then Stock 4076	FE	05.12.08	10
18	AC	Cost / part: _____	FE	05.12.12	10
19	DC	Close W/O Inspect Level 21	FE	05.12.12	10

Rev	Date	Change	Revised By	Approved
A	04.12.01	New issue	KJ/JLM	

RELEASED
04.12.03

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	
05-12-06	1/	Make change AS per Dwg permanent change				KT 05-12-06 PER QSI 842	2 05-12-06	

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes ☒ No ☐ DQA: 19 Date: 05/12/12
 QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



DESIGN #	DRAWN BY #	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED #	APPROVED #	DRAWING NO. D3151	REV. B SHEET 1 OF 1
DATE 04.09.08		TITLE DOUBLER ASSEMBLY	SCALE 1:4
A	02.04.23	NEW ISSUE	
B	04.09.08	RE-DESIGN	

MS20426AD3-3 RIVET (1)
(6 PLACES)

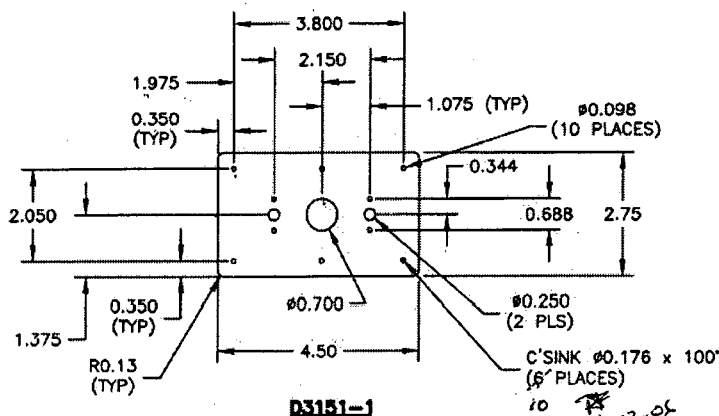
MS21059L08 NUTPLATE (1)
MS20426AD3-4 RIVET (2)
(2 PLACES)

D3151-3

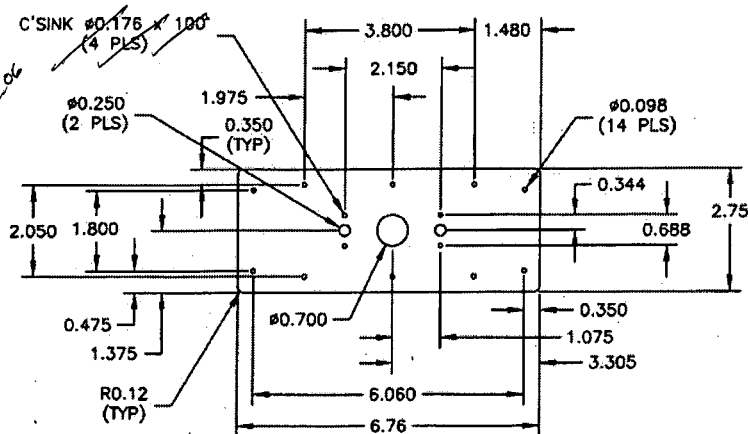
D3151-1

D3151-041 DOUBLER ASSEMBLY
REPLACES PREMIER P/N B30-23000-173/-174

RELEASED
04.11.23



D3151-1



D3151-3

NOTES

- 1) MATERIAL: 2024-T3 SHEET (QQ-A-250/4) 0.040" THICK (REF. DART SPEC. M2024T3S.040)
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) ALL DIMENSIONS ARE IN INCHES
- 5) BREAK ALL UNMARKED SHARP EDGES 0.005 TO 0.010
- 6) IDENTIFY WITH DART P/N D3151-041 USING FINE POINT PERMANENT INK MARKER

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY

WORK ORDER
NO. 24685

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2325.35

Job Costing Report

Dart Aerospace Ltd.
Hawkesbury

Oct 25, 2005
04:04 pm

Work Order No : 0024685
Project Name : D3151-041
Project For : WK546
Work Order Type : Main
Main WO Number :
House Part Number : D3151-041
Description : Doubler Assembly
Manufactured : Yes
Amount Req'd : 5
Amount Done : 0
Start Date : 10-25-05
Est Finish Date : 11-15-05
Act Finish Date :
Drawings Req'd : No
Ok for Approval :
Approval Rec'd :

Department Code:
Burden Flags : NNNNNNNN
WO Status : Open
Invoice State : Not Invoiced
Invoice Date :
Invoice Number :
Invoice Amount : 0.00
Order Entry No :
OE Value : 0.00
Est Mark Up : 0.000%
Actual Mark Up : 0.000%
\$0 Posted to Finished Goods

	Estimated	Actual	Var. %	Posted	To Post
Material Cost :	0.00	0.00	0.00	0.00	0.00
Engineering Hours :	0.00	0.00	0.00		
Engineering Cost :	0.00	0.00	0.00	0.00	0.00
Production Hours :	0.00	0.00	0.00		
Production Cost :	0.00	0.00	0.00	0.00	0.00
Packaging Hours :	0.00	0.00	0.00		
Packaging Cost :	0.00	0.00	0.00	0.00	0.00
OverHead Hours :	0.00	0.00	0.00		
OverHead Cost :	0.00	0.00	0.00	0.00	0.00
CNC Hours :	0.00	0.00	0.00		
CNC :	0.00	0.00	0.00	0.00	0.00
Misc. Hours :	0.00	0.00	0.00		
Misc. :	0.00	0.00	0.00	0.00	0.00
Burden :	0.00	0.00	0.00		
Total Cost :	0.00	0.00	0.00		
Mark up :	0.000	0.000			
Selling Cost :	0.00	0.00			

	Estimated	Actual
Labour Hrs/Amount Done :	0.00	0.00
Profits/ (Loss) :	0.00	0.00

DART AEROSPACE LTD		Work Order: 27685
Description:		Part Number: 3151-3
Inspection Dwg:	Rev:	Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

☒ First Article ☐ Prototype

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
6.76	±.030	6.762	/			
2.75	±.030	2.751	/			
Ø.700		.700	/			
Ø.250		.252	/			
Ø.098		.099	/			
6.060	±.010	6.062	/			
1.375	--	1.375	/			
.475	--	.476	/			
2.050	--	2.051	/			
1.800	--	1.800	/			
.350	--	.351	/			
1.975	--	1.976	/			
3.800	--	3.801	/			
2.150	--	2.151	/			
1.480	--	1.481	/			
.344	--	.345	/			
.688	--	.688	/			
.350	--	.351	/			
1.075	--	1.077	/			
3.305	--	3.306	/			

Measured by: SA	Audited by: RG	Prototype Approval:
Date: 05.12.03	Date: 05.12.03	Date:

Rev	Date	Change	Revised by	Approved
A		New Issue	KJ/RF	

Date: Monday, 11/21/2005 3:41:42 PM
 User: Linda Lacelle

Process Sheet

Customer :	CU-DAR001 Dart Helicopters Services	Drawing Name :	DOUBLER ASSEMBLY	
Job Number :	24685			
Estimate Number :	10786			
P.O. Number :		Part Number :	D3151041	
This Issue :	11/21/2005	S.O. No. :		
Prsht Rev. :	NC	Drawing Number :	D3151 REV B	
First Issue :	/ /	Project Number :		
Previous Run :		Drawing Revision :	B	
	Type :	Material :		
	SMALL /MED FAB	Due Date :	11/28/2005	Qty: 5 Um: Each
Written By :				
Checked & Approved By :				
Comment :	Est A 04.12.01 New issue KJ/JLM			

Additional Product

Job Number:



Seq. #:	Machine Or Operation:	Description :
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1.0	24685A	DOUBLER ASSEMBLY
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Comment: Sub-Component DOUBLER ASSEMBLY

2.0	24685B	DOUBLER ASSEMBLY
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Comment: Sub-Component DOUBLER ASSEMBLY

3.0	D31511	Bracket Flat Pattern
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Comment: Qty.: 1.0000 Each(s)/Unit Total : 5.0000 Each(s)

BRACKET FLAT PATTERN

Pick:

Qty	Part Number	Description	Batch
1	D3151-1	Spacer	

4.0	D31513	BRACKET
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Comment: Qty.: 1.0000 Each(s)/Unit Total : 5.0000 Each(s)

BRACKET

Pick:

Qty	Part Number	Description	Batch
1	D3151-3	Bracket	

5.0	MS20426AD33	Rivet
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Comment: Qty.: 6.0000 Each(s)/Unit Total : 30.0000 Each(s)

Rivet

Pick:

Qty	Part Number	Description	Batch
6	MS20426AD3-3	Rivet	

Date: Monday, 11/21/2005 3:41:42 PM
User: Linda Lacelle

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: DOUBLER ASSEMBLY

Job Number: 24685

Part Number: D3151041

Job Number:



Seq. #:	Machine Or Operation:	Description :
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6.0	MS20426AD34	RIVET
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Comment: Qty.: 4.0000 Each(s)/Unit Total : 20.0000 Each(s)

RIVET

Pick:

Qty	Part Number	Description	Batch
4	MS20426AD3-4	Rivet	

7.0	MS21059L08	Nut
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Comment: Qty.: 2.0000 Each(s)/Unit Total : 10.0000 Each(s)

Nut

Pick:

Qty	Part Number	Description	Batch
2	MS21059L08Nut	Plate	

8.0	SMALL FAB 1	SMALL & MEDIUM FAB RESOURCE 1
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Comment: SMALL & MEDIUM FAB RESOURCE 1

Assemble as per Dwg D3065 and Identify as D3065-041

9.0	QC5	INSPECT WORK TO CURRENT STEP
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Comment: INSPECT WORK TO CURRENT STEP

10.0	PACKAGING 1	PACKAGING RESOURCE #1
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Comment: PACKAGING RESOURCE #1

Identify with P/N and B/N as per Dwg using a permanent fine point marker, then Stock

Location: _____

11.0	DC	DOCUMENT CONTROL
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Comment: DOCUMENT CONTROL

Inspection Level 21

Job Completion



Job Costing Report

Dart Aerospace Ltd.
Hawkesbury

Nov 08, 2005
12:44 pm

Work Order No : 0024685
Project Name : D3151-041
Project For : WK546
Work Order Type : Main
Main WO Number :
House Part Number : D3151-041
Description : Doubler Assembly
Manufactured : Yes
Amount Req'd : 5
Amount Done : 0
Start Date : 10-25-05
Est Finish Date : 11-15-05
Act Finish Date :
Drawings Req'd : No
Ok for Approval :
Approval Rec'd :

Department Code:
Burden Flags : NNNNNNNN
WO Status : Open
Invoice State : Not Invoiced
Invoice Date :
Invoice Number :
Invoice Amount : 0.00
Order Entry No :
OE Value : 0.00
Est Margin : 0.000%
Actual Margin : 0.000%
\$0 Posted to Finished Goods

	Estimated	Actual	Var. %	Posted	To Post
Material Cost :	0.00	0.00	0.00	0.00	0.00
Engineering Hours :	0.00	0.00	0.00		
Engineering Cost :	0.00	0.00	0.00	0.00	0.00
Production Hours :	0.00	0.00	0.00		
Production Cost :	0.00	0.00	0.00	0.00	0.00
Packaging Hours :	0.00	0.00	0.00		
Packaging Cost :	0.00	0.00	0.00	0.00	0.00
OverHead Hours :	0.00	0.00	0.00		
OverHead Cost :	0.00	0.00	0.00	0.00	0.00
CNC Hours :	0.00	0.00	0.00		
CNC :	0.00	0.00	0.00	0.00	0.00
Misc. Hours :	0.00	0.00	0.00		
Misc. :	0.00	0.00	0.00	0.00	0.00
Burden :	0.00	0.00	0.00		
Total Cost :	0.00	0.00	0.00		
Margin :	0.000	0.000			
Selling Cost :	0.00	0.00			

	Estimated	Actual
Labour Hrs/Amount Done :	0.00	0.00
Profits/(Loss) :	0.00	0.00